



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/840,767	04/23/2001	J. Graham Mobley	A-7195	4247

5642 7590 11/26/2007  
SCIENTIFIC-ATLANTA, INC.  
INTELLECTUAL PROPERTY DEPARTMENT  
5030 SUGARLOAF PARKWAY  
LAWRENCEVILLE, GA 30044

EXAMINER
----------

BROWN, RUEBEN M

ART UNIT	PAPER NUMBER
----------	--------------

2623

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

11/26/2007

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTOmail@sciatl.com

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/840,767	MOBLEY ET AL.	
	Examiner	Art Unit	
	Reuben M. Brown	2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 September 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-6 and 9-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1, 3-6 & 9-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received:
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/5/2007 has been entered.

### ***Response to Arguments***

2. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2623

4. Claims 1, 3, 6, 9, 12, 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bodeep, (U.S. Pat # 5,864,672), in view of Admitted Prior Art Fig. 3, and further in view of Dufresne, (U.S. Pat # 4,920,533) and Oakley, (U.S. Pat # 3,886,454).

Considering amended claim 1, the claimed communication system for transmitting forward & reverse signals, the communication system comprising:

‘a plurality of optical nodes including a reverse transmitter, each optical node for receiving reverse analog signals and for providing reverse digital optical signals’, is met by the mini fiber node(s) 260 of Bodeep, see (Fig. 2; col. 5, lines 3-65; col. 4, lines 1-40). Bodeep is directed to a bi-directional system and discloses that the MFN 260 receives returns signals transmitted from end units 210-250 and converts for upstream transmission to FN 200 and/or CO 110, using optical fiber 270.

As for the claimed, ‘converter for converting a reverse analog signal into a digitized reverse signal’, Bodeep teaches that the upstream communication can use any of the well-known forms of analog or digital communication available for the particular medium selected for the upstream path’, see col. 6, lines 34-38. However, Bodeep does not explicitly discuss an A/D converter. Nevertheless, Admitted Prior Art Fig. 3, discloses an A/D converter 308 that receives RF in, converts the RF to analog signals and transmits using Digital Transmitter 305. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to

Art Unit: 2623

modify Bodeep with A/D disclosed in Admitted Prior Art Fig. 3, at least for the known benefit of transmitting upstream signals from a subscriber in analog form and then converting to digital for transmission over a fiber optic cable, which because of its bandwidth allows many more signals to be transmitted than could be transmitted in analog form.

'carrier-detect circuit coupled to the converter for detecting the presence of a carrier signal in the digital optical signal', is not explicitly taught. However Dufresne, which is in the same field of endeavor of upstream transmission, discloses that the system operates such that the filter 7 will remain shut off until it senses the presence of upstream carrier signal, see col. 5, lines 25-42. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Bodeep with the feature of detecting the presence of upstream data signals, and only transmitting at that time, for the improvement of reducing the amount of ingress noise transmitted upstream, as taught by Dufresne, col. 1, lines 46-60; col. 5, lines 30-34.

As for the claimed 'delay circuit', Dufresne does not discuss such a feature. Nevertheless Oakley, which is in the same field of endeavor provides a teaching of a delay 84, which holds the signal until a threshold is sensed by sensor 83, and then closes the switch 82 to allow the signals to pass, see (Fig. 2B; col. 5, lines 45-67 thru col. 6, lines 1-20). It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify the combination of Bodeep & Dufresne with the technique of a delay circuit and switch, for the desirable advantage of avoiding losing any of the message information, prior to sensor 83 sending its control signal to switch 82, as taught by Oakley, col. 2, lines 11-67.

Regarding the additionally claimed feature of, 'wherein the reverse transmitter transmits the digital optical signal only in the presence of the detected carrier' is met by the combination of transmitter 265, in Bodeep, and Dufresne, col. 5, lines 25-42.

'reverse receiver coupled to the plurality of optical nodes via a digital network for receiving the reverse digital optical signal from each of the plurality of optical nodes, wherein the digital network passively combines the reverse digital optical signals from the plurality of optical nodes without wave division multiplexing on the received digital optical signals, is met by operation of the FN 200 and/or CO 110, (see Fig. 2; col. 5, lines 11-15; col. 6, lines 26-38; col. 10, lines 1-12). The coupler 544, which is illustrated as being located in FN 200, performs passive combining of optical signals, as claimed.

Considering claim 3, the claimed 'the reverse receiver coupled to the digital network for receiving the combined digital optical signals and converting the digital optical signals to analog optical signals', is met by the combination of Admitted Prior Art Fig. 3, Digital Receiver 310 and D/A converter 315 and the FN 200/CO 110 of Bodeep, (Fig. 2; Fig. 5). 'A headend that receives and process the analog RF signals', is also met by the CO 110 of Bodeep. The claimed 'burst-mode' feature also reads on the operation of Bodeep & Dufresne.

Dufresne also discloses that data transmitted from the headend is in packet form that includes destination information, Fig. 3; col. 6, lines 27-37. Thus it would have been obvious to

Art Unit: 2623

transmit data upstream also using packet from with destination address, such as in a header, for the known advantage of ensuring the proper reception of the transmitted data.

Considering claim 6, the claimed elements of a communication system for transmitting and receiving optical signals over a communications medium', corresponds directly with subject matter mentioned above in the rejection of claim 1, and is likewise treated. For instance, the claimed 'plurality of optical transmitter', corresponds with the 'plurality of optical nodes', recited in claim 1.

As for the additionally claimed feature of transmitting on a predetermined wavelength, it would have been obvious for one ordinary skill in the art at the time the invention was made, to modify Bodeep to transmit the upstream signal on a predetermined wavelength, at least for the desirable benefit of avoiding collision, since when a plurality of channels are predetermined, such an arrangement serves to avoid collision on the site.

Considering claim 9, the claimed feature corresponds with subject matter discussed in the rejection of claim 3, and is likewise addressed.

Considering claim 12, Bodeep is a hybrid fiber coax system.

Art Unit: 2623

Considering claim 14, the claimed A/D converter is met by the A/D converter 308 disclosed in Admitted Prior Art Fig. 3. The MFN 260 meets the claimed, 'optical transmitter converts digitized reverse signal to provide reverse digitized optical signal.

Considering claim 15, it would have been obvious to operate the carrier detect of Dufresne by detecting a carrier signal at any point in the circuit.

4. Claims 4-5, 10-11 & 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bodeep, Admitted Prior Art Fig. 3, Dufresne & Oakley, and further in view of LaJoie, (U.S. Pat # 5,850,218).

Considering claim 4, Bodeep is directed to a CATV system that transmits analog & digital signals, but does not disclose a digital and analog headend. Examiner points out that the claimed feature is broad enough to read on a single headend that receives both digital and analog signals. LaJoie provides a teaching of a headend that receives both analog and digital signals., (Col. 2, lines 58-67; col. 19, lines 41-67 & col. 11). It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Bodeep with the teachings of LaJoie, for the desirable advantage of providing a wider range of services to the consumer.

Considering claim 5, the signals in LaJoie necessarily includes an addressing means in order to address the data to the proper recipient systems. LaJoie inherently includes



Art Unit: 2623

discriminator that transmits analog signals to the analog headend, and the digital signals to the digital headend.

5. Claims 16, 18-19 & 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bodeep & Dufresne.

Considering claim 16, the claimed method for conducting reverse communications in a subscriber TV system, comprising steps that correspond with subject matter mentioned above in the rejection of claim 1, are likewise analyzed.

‘receiving at an optical transmitter reverse signal from a subscriber equipment’ corresponds with the ‘optical node’, and is met by MFN 260 of Bodeep.

‘converting the reverse signal to a reverse optical signal’, is also met by the operation of MFN 260, col. 5, lines 3-30. As for additionally claimed, ‘only when the presence of a reverse carrier signal is detected by a carrier-detect circuit’, the feature also reads on the rejection of Bodeep, in view of Dufresne, as analyzed in claim 1.

‘transmitting the reverse digital optical signal upstream to a digital network’ is met by the optical fiber 270 of Bodeep, col. 5, lines 4-30.

‘passively combining a plurality of reverse optical signals at a digital network without the use of wave division multiplexors’, reads on the passive optical combiner or coupler 544, (Fig. 5; col. 10, lines 1-25).

‘converting at a receiver the plurality of reverse digital optical signals back to a plurality of reverse signals’, reads on the operation of the CO 110, which is the final destination of the subscriber upstream signals, col. 1, lines 32-36; col. 3, lines 45-50; Fig. 1; Fig. 2.

Considering claim 18, Dufresne also discloses that data transmitted from the headend is in packet form that includes destination information. Thus it would have been obvious to transmit data upstream also using packet form with destination address, such as in a header, for the known advantage of ensuring the proper reception of the transmitted data.

Considering claim 19, as for the additionally claimed feature of transmitting on a common wavelength, it would have been obvious for one ordinary skill in the art at the time the invention was made, to modify Bodeep to transmit the upstream signal on a common wavelength, at least for the desirable benefit of utilizing standard configured hardware.

Considering claim 22, the claimed subject matter reads on the operation of the FN 520/200, col. 10, lines 1-30.

Art Unit: 2623

6. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bodeep, in view of Dufresne, further in view of Admitted Prior Art Fig. 3.

Considering claim 17, as for the claimed, 'converter for converting a reverse analog signal into a digitized reverse signal', Bodeep teaches that the upstream communication can use any of the well-known forms of analog or digital communication available for the particular medium selected for the upstream path', see col. 6, lines 34-38. However, Bodeep does not explicitly discuss an A/D converter. Nevertheless, Admitted Prior Art Fig. 3, discloses an A/D converter 308 that receives RF in, converts the RF to analog signals and transmits using Digital Transmitter 305. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Bodeep with A/D disclosed in Admitted Prior Art Fig. 3, at least for the known benefit of transmitting upstream signals from a subscriber in analog form and then converting to digital for transmission over a fiber optic cable, which because of its bandwidth allows many more signals to be transmitted than could be transmitted in analog form.

Dufresne also discloses that data transmitted from the headend is in packet form that includes destination information. Thus it would have been obvious to transmit data upstream also using a packet format with destination address, such as in a header, for the known advantage of ensuring the proper reception of the transmitted data.

7. Claims 20-21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bodeep & Dufresne, further in view of LaJoie.

Considering claims 20-21, Bodeep is directed to a CATV system that transmits analog & digital signals, but does not disclose a digital and analog headend. Examiner points out that the claimed feature is broad enough to read on a single headend that receives both digital and analog signals. LaJoie provides a teaching of a headend that receives both analog and digital signals., (Col. 2, lines 58-67; col. 9, lines 41-67 ; col. 10 & col. 11). It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Bodeep with the teachings of LaJoie, for the desirable advantage of providing a wider range of services to the consumer.

### *Conclusion*

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A) Farham Teaches fiber/coax system.

Art Unit: 2623

**Any response to this action should be mailed to:**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

**or faxed to:**

(571) 273-8300, (for formal communications intended for entry)

**Or:**

(571) 273-7290 (for informal or draft communications, please label  
"PROPOSED" or "DRAFT")

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Reuben M. Brown M. Brown whose telephone number is (571) 272-7290. The examiner can normally be reached on M-F(8:30-6:00), First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Kelley can be reached on (571) 272-7331. The fax phone numbers for the organization where this application or proceeding is assigned is (571) 273-8300 for regular communications and After Final communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Reuben M. Brown



CHRIS KELLEY  
SUPERVISORY PATENT EXAMINER  
BIOLOGY CENTER 2600